

Thomas Hilbert Environmental Engineer Winnebago Reclamation 8403 Lindenwood Rd. Rockford, IL 61109 (815) 874-4806 November 29, 1993

US EPA RECORDS CENTER REGION 5



Recycling and waste disposal

Mr. Bernie Schorle Remedial Project Manager United State Environmental Protection Agency Region V

77 West Jackson Boulevard

Chicago, IL 60604-3590
Re: Replacement and repair of monitoring well nest G119/G119A.
Final Waste Elevation and scheduling of work for remaining

major RD/RA elements.

Dear Bernie:

4920 Forest Hills Road Loves Park Illinois 61111 Since there is a significant amount planning and activity outlined for the coming year I feel that it may be appropriate to plan a meeting between the USEPA,WARZYN, and ourselves sometime in the afternoon during the latter half of the week begining December 5th, 1993 to discuss scheduling, the coordination of landfill projects with CERCLA projects, and any other concerns regarding the Pagel landfill/ACME Solvent study area. If you have some dates that are convenient for you please advise me and I will organize an acceptable date for everyone involved.

P.O. Box 2071 Loves Park Illinois 61130 I have included a copy of the Illinois Environmental Protection Agency document LPC-PA2 which contains detailed instructions for This is the quidance that we will landfill design submittals. following when putting together our application for "significant modification" of our exisiting IEPA operating permit inorder to comply with the newer IEPA solid waste Since we will be filing for a permit modification regulations. under 35 IAC 814 subpart C, there are certain elements outlined in LPC-PA2 that we are not required to submit. These are outlined at 35 IAC 814.302. The exemptions at 35 IAC 814.302 (1),(2) and (5) may be partially or wholly superseded by the requirements of 40 CFR part 258.

815.654.5952 Fax 815.654.4717 Also enclosed is a narrative description of well repair, replacement and development as well as a boring log and well contruction reports for the well nest G119/G119A. G119 has been abandoned and the replacment well has been designated R119.

If you have any questions regarding any of the aforementioned subjects or the well repair and replacement procedures, please give me a call.

Sincerely,

Thomas Hilbert

cc: John Holmstrom, William Charles Ltd. Gary Marzorati, William Charles Ltd.

Martin Hamper, WARZYN, Inc.

WELL REPLACEMENT AND REPAIR FOR G119/G119A

The following is a narrative description of the procedures used to replace and abandon well G119 and to repair well G119A. Well construction reports and a boring log for R119 are enclosed. The well construction report for G119A indicates revised elevations for the top of inner casing, top of outer casing, and ground surface:

ABANDONMENT OF WELL G119

G119 was not repairable due to the high probability that the seal above the well screen filter pack was damaged at the time the well was damaged. The well was abandoned using method I-B outlined in Table one of the IEPA publication "GROUNDWATER MONITORING NETWORK FOR NON-HAZARDOUS SOLID WASTE DISPOSAL FACILITIES, IEPA-DLPC, April 1990" (enclosed). The procedure was slightly altered by performing step 3 prior to step 2 and using a bentonite-grout (21b powdered volclay® per 941b bag of cement) in step 4.

INSTALLATION AND DEVELOPMENT OF REPLACEMENT WELL R119
R119 was installed using standard procedures outlined in 77 IAC part 920
and the aforementioned publication. The well location and elevations were
surveyed using an surveyor registered and licensed in the state of
Illinois. A boring log and well construction report have been produced and
are enclosed. Ambient air monitoring performed within the exclusion zone
indicated that no airborne hazards were present.

REPAIR OF WELL G119A

Field examination of well G119A indicated that the damage to the well was superficial. There was no evidence of damage to the seal above the filter pack or the bentonite backfill in the annular space above the filter seal. Repair of G119A was accomplished by removing the damaged section of riser pipe and splicing into the existing undamaged stainless steel riser at the coupling approximately 3 feet below ground surface. Only the 5 foot section of galvanized riser and protective casing was unrecoverable. The upper damaged section of casing was offset from the lower undamaged portion and soil was plugging the well casing indicating a need to redevelop well G119A. It is not expected that surface contamination will pose a problem in this well since the field is not farmed and there is no probability that runoff from surrounding cultivated properties has impacted this well. The only possibility of contamination would occur from deliberate action by the individual(s) who vandalized the well nest.

WELL DEVELOPMENT PROCEDURES FOR G119/G119A

Well G119 was developed by using a 3 foot stainless steel bailer to surge and purge the well. Approximately 25 gallons (29 well volumes) of water was removed using this technique prior to sampling the well.

Well G119A was developed using a 3 foot stainless steel bailer to surge the well and a Brainerd-Kilmer® hand pump to remove 50 gallons (16 well volumes) of water prior to sampling.

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LOG OF TEST BORING

Project Winnebago Reclamation
8403 Lindenwood Road
Location Rockford, Illinois 61109

Boring No. R119
Surface Elevation 718.2
Job No.
Sheet 1 of 1

_					21	00 Corporate Drive, Addison, Illinois 60101, (708)	691-50	00	_			\prec
	SAMPLE VISUAL CLASSIFICATI							BACKFILL			PERTIES	<u>s</u>
lumber	Rec. (in.)	Mois- ture	N Value	Depth (ft.)	PROFILE	and Remarks		MA SE	qu (qa) (tsf)	PID (ppm)		
					•	Blind Drilled Refer to Boring Log G119 for Detailed Stratigraphy						·
				- - 5- - - - -								
				- - - 10- - - - - -								
1			11	- - -		Medium, Dense, Light Brown Fine to Coarse SAND and GRAVEL, Silt and Tr of Clay intermittent	race					
				- - 15- - - -								
				- - - - 20	-							
				- - - - - - - 25		Blind Drilled Refer to Boring Log G119 for Detailed Stratigraphy Installed Well R119 at 21 Feet						
			W			EVEL OBSERVATIONS		(ENER	AL NO	TES	
Time Dep	e Af th to	rilling ter Dri Water Cave	lling	12.0	ft.	Upon Completion of Drillingft.	Logger	F:	/3/93 Endische Chi Hilbert Edited Hollow	ef tor P. S i	Rig mith	1
				s represe	ent t	he approximate boundary between soil types			by WRS			JKP

• Illinois Environme	ntal Protection	Agency	Well Completion Report						
Site 4: 2018080	0.0.1	CountyWinneh	pago Well # R 119						
			ordinate: Northing 2003114.01 Easting 799230.31						
			Date Drilled Start: 11-03-93						
-			•						
Driller: _J. Reiner	Geol	ogist: <u>I. Hilber</u>	rt Date Completed: 11-03-93						
Drilling Method: Hollow S	Stem Auger		Drilling Fluids (type):						
Annular Space Details			Elevations — .01 ft. 720 81 MSL Top of Protective Casing						
Type of Surface Seal:C	oncrete		720 31 MSL Top of Riser Pipe 2 11 ft. Casing Stickup						
Type of Annular Scalant: Conc	rete w/1% Ber	ntonite(dry w	t) TYTT						
Amount of cement: 4 of bag	s lbs. pe	r bag <u>94</u>	718 20 MSL Ground Surface 3 00 ft. Top of annular sealant						
Amount of bentonite: # of b	ngsQ.2 lbs. pe	r bag <u>50</u>							
Type of Bentonite Soal (Granula									
type of Bentonite Soal Oranula	r. relieu.								
Amount of bentonite: # of Bags									
Type of Sand Pack: 6-20 an	d Formation	Sand	-						
Source of Sand: Northern	Gravel Co.an	d_Formation_	-						
Amount of Sand: # of bags	1.5	bs. per bag 50	_						
Well Construction Mate	riels								
		,	_						
	8 8	8 8							
	Stainless Steel Specify Type Teflon Specify Type	PVC Specify Type Other Specify Type							
	Steel Steel Specify Teflon Specify	C City							
	N N N N N N N N N N N N N N N N N N N	7 4 10 8 A							
Riser coupling joint	Threaded		_						
Riser pipe above w.t.	316		_						
Riser pipe below w.t.	316		→						
Screen	316		_						
Coupling joint screen to riser	Inreaded	1 5+00	, 						
Protective casing	<u></u>	Stee							
Measurements	10 .01 ft. (v	where applicable)	5 50 (t. Top of Sent						
Riser pipe length	13.00		2 50 ft. Total Seal Interval						
Protective casing length	5.00								
Screen length	10.00								
Bottom of screen to end cap			11 13 (t. Top of Screen						
Top of screen to first joint	0.24'								
Total length of casing	23.34		10 00 (t. Total Screen Interval						
Screen slot size	0.010								
" of openings in screen	T								
Diameter of borehole (in)	8.00"		21 13 (t. Bottom of Screen						
1D of riser pipe (in)	2.00"		21 23 ft. Bottom of Screen						
	······································								
Completed by:	Hilbert	Surveyed by	ordon F. Stannard III. registration = 2388						

Illinois Environm	ental Pi	otection	Agency				1	Well Co	mpleti	on Report
Site =: 2 031 8 0 8 0	0 0 1	-	County	Winn	ebago			Well	s	G119A
Site Name: Winnebago Rec	lamatio	n Servi	ce,Inc.	Grid Coor	dinate: N	orthin	g <u>20</u>	03126.	2	Easting 799230.3
Drilling Contractor: Fisch										-
Driller: J. Reiner										
	-									
Drilling Method: Hand	excava	teu			Dril	ling F	luids	(type):		one
Annular Space Details								Elevati		
Type of Surface Seal:	Concrete	<u> </u>	 		T	√	T	721 720	51	MSL Top of Protective Casing MSL Top of Riser Pipe
Type of Annular Sealant: QUIC	k Gel.	Bentoni [*]	te arout		$\vec{\tau}$	$\sqrt{}$	宁	3_	31	ft. Casing Stickup
Amount of cement: # of ba	•						1	717		MSL Ground Surface
					6.			4_	00_	ft. Top of annular sealant
Amount of bentonite: # of	•				뒭		0			
Type of Bentonite Seal (Granu	lar. Pellet)	Pellet			2		10	•		
Amount of bentonite: = of Bag:	s	U	bs. per bag _		SALYSIASYING		A P. (C) (O) V			
Type of Sand Pack: #					and		12			
Source of Sand:			-		1					
Amount of Sand: # of bag	s		bs. per bag _		:					
					i					
Well Construction Mat	erials									
	2	2	2	g						
	38 E	Type	Type	Type		1				
	Stainless Steel Specify Type	Teffon Specify	PVC Specify	Other Specify	!	l				
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Riser coupling joint				_		.				
Riser pipe above w.t.						}				
Riser pipe below w.t.						Ì				
Screen			-	<u> </u>		Ì	1 1			
Coupling joint screen to rise	r 	·	ļ		!	- [•
Protective casing	L	<u> </u>	1	l]					
Measurements	ι	o .01 ft. (w	here applica	ble)	į		OC	_34	_00	_ ft. Top of Seal
				· · · · · · · · · · · · · · · · · · ·	, k	\bowtie	\bigotimes	2	_00	_ ft. Total Seal Interval
Riser pipe length	4	5.00'			_	\otimes	\otimes	36	00	
Protective casing length		5.00'] !		3			it. Top of Sand
Screen length		5.00']			42	60	
Bottom of screen to end cap	~	0.101] ;	 	, ⊹			ft. Top of Screen
Top of screen to first joint	~	0.301]	Y:F	∃:%	.\		
Total length of casing		0.40'	_			l % E	$\exists :$	<u>5</u>	_00	ft. Total Screen Interval
Screen slot size		0.010"				;::E	∃`⊱	·\	· <u></u>	
5 of openings in screen		- 			7	l: "E	= 1:	7		
Diameter of borehole 'in'		4.00"			٦.	IX.E	<u> </u>	: A	7 61	·
ID of riser pipe 'in'	 	2.00"			٦.	1: %	<u>.</u>	-4	L _60 R _00	
		· 11111"						/1		- IL DOLLUII OI DOLEIIUIE



LOG OF TEST BORING

Project Winnebago Reclamation

8403 Lindenwood Road

Location Rockford, Illinois 61109

Boring No. R119
Surface Elevation 718.2
Job No.
Sheet 1 of 1

2100 Corporate Drive, Addison, Illinois 60101, (708) 691-5000

	SAMPLE						VISUAL CLASSIFICATION								
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	_			N	Depth	PROFILE	and Remarks	1	BOREHOLE	-	qu	PID			_
Number	ĔL	(in.)	ture	Value	(ft.)	PR			82		(qa) (tsf)	(ppm)			
					- - -		Blind Drilled Refer to Boring Log G119 for Detailed Stratigraphy								
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					-	-	Blind Drilled		 	-		}			
	١						Refer to Boring Log G119 for Detailed Stratigraphy			ı					
					-		Installed Well R119 at 21 Feet								
					- 25				-						
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			illing	₹	12.0	ft.	Upon Completion of Drilling ¥ft.	Begin	1 1	11/	/3/93 End	11/	3/93		
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De	pt	th to	Cave	in				Drill	Met	ho	d Hollov			r Wel	1
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• Illinois Environmen	ital Protection	Agency		Well Co	mpletio	n Report
Site 4: 2 0 1 8 0 8 0	0.0.1	CountyWinneba	go	Well	a_R	119
Site Name: Winnebago Recla			_			l l
Drilling Contractor: Fisc						
Driller: J. Reiner						1
Drilling Method: Hallow S						
Drilling Method:	Leu Angel		Onling	ridids reyper.	· · · · · · · · · · · · · · · · · · ·	
Annular Space Details				Eleva 	tions — _81_	.01 ft. MSL Top of Protective Casing
Type of Surface Seal:CO	ncrete			$\frac{720}{3}$	_31_	MSL Top of Riser Pipe ft. Casing Stickup
Type of Annular Sealant: CONCY	ete w/1% Ben	tonite(dry wt) TÝ	T		
Amount of cement: # of bags	lbs. per	bag 94	/6.	718	-20 -	MSL Ground Surface [t. Top of annular sealant
Amount of bentonite: # of ba	ngs0_2 lbs. per	bag <u>50</u>		1		
	_					
Type of Bentonite Seal (Granular	, Pellett:					
Amount of bentonite: # of Bags _			527	3. 3. 4. 5. 1. 5.		
Type of Sund Pack: 6-20 and	1 Formation S	Sand				
Source of Sand: Northern	<u>Gravel Co.anc</u>	1 Formation				
Amount of Sand: # of bags .	<u>1.5</u> 11	bs. per bag <u>50</u>				
Well Construction Mater	rials					
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	legs (7 Ty)	7 7		111		·
\.	Stainless Steel Specify Type Teflon Specify Type	PVC Specify Type Specify Type Other				
		<u> </u>	1			
Riser pipe above w.t.	Threaded	 	1	1 1 1		
Riser pipe below w.t.	316 316	 	1	1 1 1		
Screen	316	 	1	1 1	•	
Coupling joint screen to riser	Threaded		1 1	1 1 1		
Protective casing	···· carea	Steel	1	111		
			-	1 1 1		
Measurements	to 01 ft. (w	here applicable)	\ \\		<u>5 </u>	ft. Top of Sent
Riser pipe length	13.00'		ר 🎖	X XX −		
Protective casing length	5-00'		7 8		BUL	L ft. Top of Sund
Screen length	10.00		7 1			_
Bottom of screen to end cap	0.10'		<u> </u>	기니 의 1	11	3. ft. Top of Screen
Top of screen to first joint	0.241		7 1	:日:1		10
Total length of casing	23.34			·日刘 1)() (t. Total Screen Interval
Screen slot size	0.010					
" of openings in screen		·-	\	::,日::1		
Diameter of borehole (in)	8.00"		<u> </u>		21	13 (t. Bottom of Screen
1D of riser pipe (in)	2.00"			*******	21 -	23 (t. Bottom of Borehole
Completed by: T. H	Hilbert	Surveyed by	rdon F.S	Stannard	[1].	registration = 2388

Illinois Environme	ental Pr	otection	Agency	-		1	npleti	pletion Report		
Site =: 2 021 8 0 8 0	0 0 1		County	, <u>Winn</u>	ebago		Well =	·	G119A	
Site Name: Winnebago Recl	amatio	n Servi	ce,Inc.	Grid Coord	linate: Nortl	hing 20	03126.2	2 ,	Easting 799230.3	
Drilling Contractor: Fische										
-										
Driller:J_ Reiner			-							
Drilling Method: Hand	excava	ted		·	Drilling	g Fluids	(type):	N	one	
Annular Space Details							Elevation	ons —	.01 ft.	
Type of Surface Seal:	oncrete	<u> </u>					721 -720		MSL Top of Protective Casin MSL Top of Riser Pipe	
Type of Annular Sealant: QUIC	k Gel.F	Rentoni:	te grout		$\overrightarrow{\top}$		3	.31	ft. Casing Stickup	
Amount of cement: # of ba			_				717_		MSL Ground Surface	
Amount of bentonite: # of					6.		4_	00_	ft. Top of annular sealant	
	•					0				
Type of Bentonite Seal (Granul	ar. Pellet)				Ä		•			
Amount of bentonite: = of Bags					Winderson	Kerico: Kein				
Type of Sand Pack: # 3	0 Flin	t sand	and form	<u>nation</u> s	and	1				
Source of Sand:			·							
Amount of Sand: # of bags		!	bs. per bag .							
					1					
Well Construction Mate	erials									
	2	2	əc	2						
	38 A	, Type	, Type	Š						
	Stainless Steel Specify Type	Teffun Specify	PVC Specify	Other Specify Type		1 1				
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Riser coupling joint						.]				
Riser pipe above w.t.		 .	<u> </u>			1 1 1				
Riser pipe below w.t.	<u> </u>		ļ		!					
Screen										
Coupling joint screen to riser			-]			•	
Protective casing			1	l		\				
Measurements	t	o .01 ft. (w	here applica	.ble)	i ⊠		_34_	_00	_ ft. Top of Seal	
Riser pipe length		5.00'		 -	ı 🎇		_2_		ft. Total Seal Interval	
Protective casing length		5.00'	-		X		_36	_00	ft. Top of Sand	
Screen length		5.00								
Bottom of screen to end cap		0.10'			1 ::		42	_60	ft. Top of Screen	
Top of screen to first joint		0.301			1 17.5		<u> </u>			
Total length of casing		0.40			1 1:	\square	5	00	ft. Total Screen Interval	
Screen slot size	 				ተ ነ∿.		<u> </u>		it. lotal Screen interval	
of openings in screen		0.010"			┤	日.	1			
Diameter of borehole 'in'		4.00"				[日]		,		
1D of riser pipe (in)	+		· · · · · ·		d. €		$\frac{47}{1}$			
To or tiser bibe till		2.00"			ـا لـ		4 ૄ	لللـــــــــــــــــــــــــــــــــــ	1. ft. Bottom of Borehole	
Completed by:THil	bert_		Surve	eyed by:	G. Stann	ard		111. ře	egistration = 2388	



LOG OF TEST BORING

Project Winnebago Reclamation
8403 Lindenwood Road
Location Rockford, Illinois 61109

Boring No. R119
Surface Elevation 718.2
Job No.
Sheet 1 of 1

2100 Corporate Drive, Addison, Illinois 60101, (708) 691-5000

					<u> </u>	OO Corporate Drive, Addison, Illinois 60101, (708						
, 	SAMPLE When Rec. Mois- N Depth (in.) ture Value (ft.)				ILE	VISUAL CLASSIFICATION	N	로	PERT	ERTIES		
Jumber	Rec.	Mois- ture	N Value	Depth (ft.)	PROFILE	and Remarks		BOREHOLE	qu (qa) (tsf)	PID (ppm)		
				- - - -		Blind Drilled Refer to Boring Log G119 for Detailed Stratigraphy			1,1414			
				- - - - - - -								
				- - - - - - 10-								
1			11	_ <u>¯</u> <u>¯</u> <u>¯</u> - - - -		Medium, Dense, Light Brown Fine to Coarse SAND and GRAVEL, Silt and To of Clay intermittent	race					
				- - - - - - - -								
				_ - - 20								
						Blind Drilled Refer to Boring Log G119 for Detailed Stratigraphy Installed Well R119 at 21 Feet						
			W	⊢ 25 ATEI		EVEL OBSERVATIONS			GENER.	AL NO	OTES	1
Tim Dep	ne Aftoth to	illing er Dri Water Cave	lling	12.0	ft.	Upon Completion of Drillingft.	Logger	<u>F</u> T.	/3/93 Endische Ch Hilbert Ediod Hollo	ief tor P. S	3/93 Ri mith Auger V	·
				s represe y be gra	ent t dual	he approximate boundary between soil types			n by WRS			ID: JKP

• Illinois Environme	ntal Protection	Agency	Well Completion Report
Site 4:2_0_1_8_0_8_0	0.0.1	_ CouncyWinnehag	10 Well « R 119
		•	nate: Northing 2003114-01 Easting 799230.31
			Date Drilled Start: 11-03-93
-			
			Date Completed: 11-03-93
Drilling Method: HOLLOW S	item Auger		_ Drilling Fluids (type):
Annular Space Details			Elevations — .01 ft. 720 81 MSL Top of Protective Casing
Type of Surface Seal:CC	oncrete		720 31 MSL Top of Riser Pipe 2 11 ft. Casing Stickup
Type of Annular Sealant: CONCI	rete w/1% Ben	tonite(dry wt)	TYTT
Amount of cement: # of bag	s lbs. per	bag <u>94</u>	718 20 MSL Ground Surface 718 100 ft. Top of annular sealant
Amount of bentonite: # of b	ags0_2 lbs. per	bag <u>50</u>	
Type of Bentonite Soal (Granula	r Pelleti: Pelle	t	
Amount of bentonite: # of Bags			(Nep./Bis/Gold
Type of Sund Pack: 6-20 an	d Formation S	<u>ana</u>	
Source of Sand: Northern	Gravel Co.and	Formation	
Amount of Sand: # of bags	1.5 tt	os. per bag <u>50</u>	
Well Construction Mate	rials		
	Type Type	8 8	
	y Ty		
	Steel Specify T. Teflon Specify T. Specify T. Specify T.	PVC Specify Type Other Specify Type	
Riser coupling joint	<u>หลด ยัง</u> Threaded	<u> </u>	
Riser pipe above w.t.	316	 	
Riser pipe below w.t.	316		
Screen	316		
Coupling joint screen to riser			
Protective casing		Steel	
Measurements	to .01 ft. (w	here applicable)	5 50 (t. Top of Sent
Riser pipe length	13.00'		2 50 ft. Total Seal Interval
Protective casing length	5-00'		8 00 ft. Top of Sand
Screen length	10.00		
Bottom of screen to end cap			11 13 (t. Top of Screen
Top of screen to first joint	0.24'] (: : : : : : : : : :
Total length of casing	23.341		10 00 (t. Total Screen Interval
Screen slot size	0.010		
" of openings in screen			
Diameter of borehole (in)	8.00"		21 13 ft. Bottom of Screen
ID of riser pipe (in)	2.00"		21 23 (t. Bottom of Borehole
Completed by: T.	Hilbert	Surveyed Bor	don F.Stannard III. registration # 2388

Illinois Environn	nental P	rotection	n Agency				Well Co.	mpleti	ion Report
Site =: 2 031 8 0 8 0	0.0.1		County	Winne	bago		Well	.	G119A
Site Name: Winnebago Rec	lamatio	n Servi	ce.Inc.	Grid Coordi	nara: Nari	hing 20	003126.	2	799230.3
Drilling Contractor: Fisch									•
_									
Driller: <u>J. Reiner</u>		Geo	ologist:T	. Hilber	rt		Dat	e Comp	leted: <u>11/03/93</u>
Drilling Method: Hand	l excava	ted			_ Drillin	g Fluids	(type):	<u> </u>	lone
Annular Space Details	-						Elevati		
Type of Surface Seal:	Concrete	<u> </u>			I				MSL Top of Protective Casir MSL Top of Riser Pipe ft. Casing Stickup
Type of Annular Sealant: Qui	ck Gel,	Bentoni [.]	te grout		\top	TT			it. Casing Stickup
Amount of cement: # of b	ags	lbs. pe	er bag		70		717		MSL Ground Surface
Amount of bentonite: # 0							<u> </u>		ft. Top of annular sealant
	•					0			
Type of Bentonite Seal (Grant	ılar. Pellet)	Perrer_			A	0	•		
Amount of bentonite: = of Bag	s	l	bs. per bag _		<u> </u>	(Ve p. (O) !! ((O))			
Type of Sand Pack: #	30 Flin	t sand	and form	ation sa	and				
Source of Sand:				<u>_</u>	i				
Amount of Sand: # of bag	;s		lbs. per bag _	·····					
Well Construction Ma	terials				:				
					į				
	ype	Type	Type	ad.					
	less fy T	£ .	2	2					
	Stainless Steel Specify Type	Teflon Specify	PVC Specify	Other Specify Type	į				
Riser coupling joint	xxx	. ⊱ ਔ	<u> </u>	0 37	ļ	'			
Riser pipe above w.t.			 						
Riser pipe below w.t.					i	1			
Screen	<u> </u>		· · · · · ·		į		ļ		
Coupling joint screen to rise	·r		 		į				
Protective casing	1				:				
	<u>L</u>	.l			ļ	} }	1		
Measurements	t	:o .01 ft. (w	here applicat	ole)	\ ⊠		34		_ ft. Top of Seal
Riser pipe length	4	5.001			₿	8 🕸	$\frac{2}{36}$		_ ft. Total Seal Interval
Protective casing length	1	5.00'				4 🔆	36	_00	ft. Top of Sand
Screen length	<u> </u>	5.00'			1.		1	co	
Bottom of screen to end car	~	0.10'			11.4	· <u>-</u>	42	60	ft. Top of Screen
Top of screen to first joint	~	0.301			N	_	\Box		
Total length of casing		50.401			!		5	_00) ft. Total Screen Interva
Screen slot size		0.010"			':		1		
- of openings in screen				-		` <u>;</u> [□]:	.1		
Diameter of borehole (in)		4.00"			1 1	"目"	4	7 61	
(D of riser pipe (in)		2.00"			1 :		1 -4		(t. Bottom of Screen) ft. Bottom of Borehole
									15. 0055011 01 001511015